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Stress Testing Economic Data

I will start with the observation that subjecting a person, institution, or social system to

extraordinary stress often reveals strengths and weaknesses that were previously hidden. The

recent economic crisis is no exception. It highlighted significant weaknesses in our financial and

regulatory systems—weaknesses that Congress and the Administration have acted to address.

However, the crisis and ongoing recovery have also revealed important weaknesses in the

statistical infrastructure that policymakers and others use to assess the performance of the

economy, to predict its future prospects, and to evaluate the effectiveness of various public

policy options. The economic crisis has given an unintended stress test of our economic and

financial indicators.

While I am relatively well acquainted with the uses of economic data—before joining the

Administration I led a million-dollar research effort called the Princeton Data Improvement

Initiative that evaluated the reliability of the government statistical agencies' main economic

indicators, such as payroll employment—in my current job I have been constantly surprised at

how little quantitative information can be brought to bear on fundamental policy questions, or,

alternatively, how difficult it can be to find valid data on important and well-defined economic

variables. In part, this reflects a lack of timeliness of certain key statistics; it also reflects the fact

that existing data are not useable or sufficiently detailed, or that relevant data simply do not exist. In my remarks I will discuss some of the major problems with our current economic statistics that have hampered our ability to understand and respond to the recent crisis, and then I will make some modest recommendations as to how some of these problems might be mitigated.

The first problem I want to discuss is timeliness. In many cases, potentially valuable information is collected infrequently or is released with a long lag, limiting its usefulness to policymakers and others trying to gauge the forces affecting the underlying economy or the impact of particular policies in real time. For example, the Federal Reserve and the National Opinion Research Center produce an excellent survey called the Survey of Consumer Finances (SCF) that provides detailed information on household finances. Tracking household balance sheets would be extremely useful in the current environment, given that declining household wealth during the crisis and the subsequent need for households to repair their finances have played a pivotal role in recent consumer spending dynamics. But this survey is typically conducted only once every three years, with well more than a year's lag between the year of the survey and the release date. Currently, the most recently available survey data refer to 2007, before the financial crisis affected consumers. The Fed did sponsor a special survey last year, re-contacting its 2007 sample to find out how the crisis had affected their balance sheets, but these data are not yet available to researchers.

As another example, the best information we have on detailed household spending patterns comes from the Bureau of Labor Statistics' Consumer Expenditure Survey (CEX). Timely household-level information on consumer spending could give policymakers valuable

information on the impact of stabilization policies. For instance, how much did the expiration and subsequent extension of emergency unemployment benefits in 2010 affect spending for workers suffering from long term unemployment, and were these impacts large enough to have an economically significant impact on aggregate consumer spending? Or, did the "Cash for Clunkers" program last year increase car purchases at the expense of other big-ticket items such as dishwashers? The CEX will ultimately allow us to answer such questions, but as of today we are largely in the dark, because currently the most recently available data are from 2008. Data for 2009 will be available next month, but 2010 data will not be available until October 2011.

A second problem with our economic statistics is reliability—do our statistics give us accurate information on the phenomena they are supposed to track? Many of our most important high-frequency indicators, including payroll employment and GDP, are subject to periodic revisions due to late-arriving data, and in many cases these revisions are both statistically and economically significant. For example, the absolute annual benchmark revisions to nonfarm payrolls have averaged almost 0.3 percent over the past decade, and this year the benchmark adjustment was 0.7 percent, suggesting that the economy lost over 900,000 more jobs in the 12 months ending in March 2009 than originally reported. As another example, the most recent benchmark revision to the National Income and Product Accounts revealed that the personal savings rate in the U.S. was almost 6 percent in 2009, compared with a previous estimate of just over 4 percent; the revised figure suggests that consumers made considerably more progress rebuilding their balance sheets last year than we previously believed. (This is not a criticism of the statistical agencies and staff that collect and process the data -- measuring the U.S. economy is difficult, and there is a tradeoff between speed and size of revisions – but policymakers must

acknowledge that considerable uncertainty exists, even when timely and comprehensive statistics are available.)

Aside from revisions caused by late-arriving data, agencies releasing high-frequency data also have to grapple with the problem of seasonal adjustment. Adjusting quarterly, monthly and weekly data for movements due to typical seasonal patterns, such as the spike in demand during the December holiday season, is both absolutely necessary and extremely challenging, given that the "typical" seasonal pattern can in reality change from year to year. For instance, some auto companies delayed or eliminated their normal summer production shutdowns this year. That meant that when the Federal Reserve applied its usual seasonal adjustment factors to auto production this summer, we saw a one-time surge in seasonally adjusted auto production in July, when the shutdown is usually scheduled, and a subsequent sharp decline in seasonally adjusted production in August. Another challenge is that infrequent but large shocks can distort estimates of seasonal factors, as the statistical model struggles to figure out what part of the shock is seasonal and what part is nonseasonal. The seasonally-adjusted series on real petroleum imports issued by the Bureau of Economic Analysis and incorporated into the GDP accounts has experienced large swings in recent quarters that are not apparent in alternative measures of oil imports, probably in part because their seasonal adjustment factors have been affected by large movements in oil prices in 2008 and 2009.

The third and final problem I want to address is coverage. Many of our statistics do not measure exactly what we want them to measure, and in other cases there is simply no data available on important phenomena.

In some cases, coverage gaps occur when a well-established, accurate and reliable measure fails to keep pace with events. For instance, the Mortgage Bankers Association collects useful and comprehensive data on mortgage delinquency rates. Their data, however, do not adjust for trial loan modifications. Instead, loans modified on a trial basis continue to be reported as delinquent even if they are current. Of course, this situation reflects the fact that loan modifications were not common until recently. But 1.3 million mortgages have undergone trial modification starts since early 2009 as part of the Administration's Home Affordable Modification Program. Accounting for the number of loans in modification is now critical for interpreting statistics on delinquencies.

As another example, the monthly house price index published by the Federal Housing Finance Agency is appealing in many respects; it is constructed only using repeat sales, so that it adjusts for differences in size, quality and local amenities across different houses, and it has broader nationwide geographic coverage than the Case-Shiller index, which is based only on 20 large cities. But the FHFA index underestimated the run-up in house prices that occurred prior to 2006, and the size of the subsequent crash, because it covers only houses sold with traditional conforming mortgages, which excludes the subprime, alt-A and other nontraditional loans that fueled the housing bubble.

While incomplete coverage of existing data is problematic, an even more important problem that the recent crisis has highlighted is the near-complete lack of information that we have for a

number of key economic variables. I will discuss four examples from finance, from housing markets, and from labor markets.

1) The importance of hedge funds in financial markets has grown steadily over time. Yet we lack detailed data on hedge fund positions. Indeed, the quarterly Flow of Funds Accounts published by the Federal Reserve include hedge funds in the household sector, which is in turn an artifact of the accounts' treating the household sector as a residual.

2) We lack information on the degree of interconnectedness between financial institutions and other market participants—for instance, data on counterparties to derivative transactions are almost completely lacking. As a result, it is difficult to assess systemic risk in the financial system.

3) We lack data that integrates household characteristics -- such as income, employment status, and demographic data -- with data on mortgage payments, delinquencies, and loan-to-value ratios for a representative and recent sample.[1] The lack of comprehensive micro data on mortgage behavior severely curtails our ability to understand what drives default and payment behavior, which in turn complicates the formulation of effective policy.

4) Finally, the recent recession was accompanied by an alarming increase in the rate of long-term unemployment, which has only started to come down very recently. Some economists have

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[1] Some recent empirical work has used loan-level data collected by LPS Applied Analytics, which includes some household-level information such as the FICO score and income at the time of origination, but even these data do not track household income shocks and do not provide information on second liens, making it impossible to measure homeowner equity.

suggested that recent increases in the generosity and duration of unemployment insurance benefits contribute to long-term unemployment by discouraging workers from taking jobs that are somewhat less than ideal. One way to test this hypothesis would be to study data on workers' reservation wages—the lowest wage or salary offer that they would accept—as well as information on job search behavior, including job offers and rejections. Do workers lower their reservation wage when they approach the exhaustion of benefits? The Current Population Survey collected data on unemployed workers' reservation wages in 1976, but not since then.